REMARKS

Claims 1-23 are pending in the application. Claims 1, 14, 17, and 20 are independent. By the foregoing Amendment, Applicants have amended claims 1, 10, and 20. These changes are believed to introduce no new matter and their entry is respectfully requested.

Objection to Claims 1 and 10

In paragraph 1 of the Office Action, the Examiner objected to claim 1 citing informalities. By the foregoing Amendment, Applicants have amended claim 1 to correct the informality. Accordingly, Applicants respectfully request that the Examiner reconsider and remove the objection to claim 1.

In paragraph 2 of the Office Action, the Examiner objected to claim 10 citing improper dependency. By the foregoing Amendment, Applicants have amended claim 10 to correct the improper dependency. Accordingly, Applicants respectfully request that the Examiner reconsider and remove the objection to claim 10.

Rejection of Claims 1, 7-8, 12-13, and 17 Under 35 U.S.C. §102(e)

In paragraph 4 of the Office Action, the Examiner rejected claims 1, 7-8, 12-13, and 17 under 35 U.S.C. §102(e) as being anticipated by U.S. Patent No. 6,356,689 to Greywall et al. (hereinafter "Greywall"). A claim is anticipated only if each and every element of the claim is found, either expressly or inherently, in a reference. (MPEP §2131 *citing Verdegaal Bros. v. Union Oil Co. of California*, 814 F.2d 628 (Fed. Cir. 1987)). The identical invention must be shown in as complete detail as is contained in the claim. Id. *citing Richardson v. Suzuki Motor Co.*, 868 F.2d 1226,1236 (Fed. Cir. 1989)). Applicant respectfully traverses the rejection.

Independent claim 1 recites in pertinent part "the single-crystal silicon active region doped to make it electrically conductive in order to ***thermally tune the single-crystal silicon active region to pass a specific wavelength*** in response to the received optical signal" (emphasis added). Independent claim 17 recites in pertinent part "applying a current to the doped silicon etalon to ***thermally tune*** the doped silicon etalon ***to select a wavelength*** in response to an

incident optical signal" (emphasis added). Support for this subject matter is found in original claims 1 and 17.

Applicant respectfully submits that Greywall is not properly applied to the claimed invention. Greywall appears to be directed to an improved fabrication of a Fabry-Perot etalon that is tuned using movable mirrors. The problem addressed in Greywall is that the in the fabrication process materials used undergo stress, which tends to cause "unpredictable device response and reliability problems" (Col. 2, lines 8-24). The solution proposed by Greywall is a fabrication process that eliminates the steps in the fabrication process that cause the etalon to be unreliable and unpredictable. Greywall is not concerned with thermal tuning. Applicants respectfully submit therefore that Greywall is not properly applied to the claimed invention.

Even, assuming for the sake of argument, that Greywall is properly applied to the claimed invention, Applicants respectfully submit that Greywall fails to show the identical invention as that of the claimed invention. For example, Greywall fails to teach the single-crystal silicon active region doped to make it electrically conductive in order to ***thermally tune*** the single-crystal silicon active region ***to pass a specific wavelength*** in response to the received optical signal" as recited in claims 1 and 17. As discussed above, this is because Greywall is not concerned with thermal tuning, but with fabrication of a mechanically-tuned Fabry-Perot etalon. Because Greywall is not properly applied to and/or fails to teach each and every element of the claimed invention, Applicants therefore respectfully submit that claims 1 and 17 are patentable over Greywall.

Claims 7-8 and 12-13 properly depend from claim 1, which applicants respectfully submit is patentable. Accordingly, Applicant respectfully submits that claims 7-8 and 12-13 are patentable as well. MPEP §2143.03 provides that if an independent claim is unobvious, then any claim depending from the independent claim is unobvious (citing *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988)). Accordingly, Applicant respectfully requests that the Examiner reconsider and remove the rejection to claims 1, 7-8, 12-13, and 17.

Rejection of Claims 2-6 Under 35 U.S.C. §103(a)

In paragraph 6, the Examiner rejected claims 2-6 under 35 U.S.C. §103(a) as unpatentable over Greywall in view of Neustroev et al. "Hundred MEV Ion Irradiation Effect on Dopant Depth Profiles in Silicon," 1998 (hereinafter "Neustroev"). To establish a *prima facie* case of obviousness, an Examiner must show three things: (1) that there is some suggestion or motivation to modify a reference or combine reference teachings to arrive at the claimed invention, (2) that there must be a reasonable expectation of success, and (3) that Greywall teach or suggest each and every element of the claimed invention. (MPEP §2143.) Applicant respectfully traverses the rejection.

Claims 2-6 properly depend from claim 1, which applicants respectfully submit is patentable. Accordingly, Applicant respectfully submits that claims 2-6 are patentable as well. (See MPEP §2143.03 (citing *In re Fine.*)) Accordingly, Applicant respectfully requests that the Examiner reconsider and remove the rejection to claims 2-6.

Rejection of Claim 11 Under 35 U.S.C. §103(a)

In paragraph 7, the Examiner rejected claim 11 under 35 U.S.C. §103(a) as unpatentable over Greywall in view of U.S. Patent No. 6,787,894 to Jeung et al. (hereinafter "Jeung"). Applicant respectfully traverses the rejection.

Claim 11 properly depends from claim 1, which applicants respectfully submit is patentable. Accordingly, Applicant respectfully submits that claim 11 is patentable as well. (See MPEP §2143.03 (citing *In re Fine.*)) Accordingly, Applicant respectfully requests that the Examiner reconsider and remove the rejection to claim 11.

Rejection of Claims 9-10 and 18-19 Under 35 U.S.C. §103(a)

In paragraph 8, the Examiner rejected claim 9-10 and 18-19 under 35 U.S.C. §103(a) as unpatentable over Greywall in view of U.S. Patent Application No. 2002/0155619 to Kurihara et al. (hereinafter "Kurihara"). Applicant respectfully traverses the rejection.

Claims 9-10 and 18-19 properly depend from claim 1 and 17, respectively, which applicants respectfully submit is patentable. Accordingly, Applicant respectfully submits that claims 9-10 and 18-19 are patentable as well. (See MPEP §2143.03 (citing *In re Fine.*)) Accordingly, Applicant respectfully requests that the Examiner reconsider and remove the rejection to claims 9-10 and 18-19.

Rejection of Claims 14-16 and 20-23 Under 35 U.S.C. §103(a)

In paragraph 9, the Examiner rejected claim 14-16 and 20-23 under 35 U.S.C. §103(a) as unpatentable over Greywall in view of U.S. Patent No. 5,907,420 to Chraplyvy et al. (hereinafter "Chraplyvy"). Applicant respectfully traverses the rejection.

Independent claim 14 recites in pertinent part "the single-crystal silicon active region doped to make it both electrically conductive and thermally conductive the single-crystal silicon active region coupled so as ***to receive a current to thermally tune*** the single-crystal silicon active region ***to pass a wavelength*** in response to the received optical signal" (emphasis added). Independent claim 20 recites in pertinent part "a doped silicon etalon positioned in the cavity, wherein the doped silicon etalon is ***to receive a current to thermally tune*** the doped silicon etalon" (emphasis added). Support for this subject matter is found in original claims 14 and 20.

As a first matter, as discussed above Applicants respectfully submit that Greywall is not properly applied to the claimed invention. For example, Greywall is not concerned with thermal tuning, but with mechanical tuning.

Secondly, assuming for the sake of argument that Greywall is properly applied to the claimed invention, Applicants respectfully submit the Examiner has failed to satisfy each criterion of the *prima facie* case of obviousness with respect to the claimed invention. Applicants only need demonstrate that the Examiner has not met the initial burden of making a *prima facie* case of obviousness with respect to the claimed invention and if the Examiner fails to show that Greywall in view of Chraplyvy teaches each and every element of claims 14-16 and 20-23, the Examiner has failed to meet the burden of establishing a *prima facie* case of obviousness of claims 14-16 and 20-23over Greywall in view of Chraplyvy.

Applicants respectfully submit that Greywall fails to teach "to receive a current to thermally tune the single-crystal silicon active region to pass a wavelength" as recited in claim 14. The Examiner has not shown where Greywall teaches "to receive a current to thermally tune the single-crystal silicon active region to pass a wavelength" as recited in claim 14. Applicants also respectfully submit that Greywall fails to teach "to receive a current to thermally tune the doped silicon etalon" as recited in claim 20. The Examiner has not shown where Greywall teaches "to receive a current to thermally tune the doped silicon etalon" as recited in claim 20.

Applicants respectfully submit that Chraplyvy fails to make up for the deficiency. Chraplyvy appears to be directed to optical networks. Chraplyvy is not concerned with, and the Examiner does not assert that Chraplyvy teaches or suggests thermal tuning. Applicants respectfully submit therefore that they have shown that the Examiner has failed to meet the burden of establishing a *prima facie* case of obviousness of claims 14 and 20 over Greywall in view of Chraplyvy and that claims 14 and 20 are thus patentable over Greywall in view of Chraplyvy.

Claims 15-16 and 21-23 properly depend from claim 14 and 20, respectively, which applicants respectfully submit is patentable. Accordingly, Applicant respectfully submits that claims 15-16 and 21-23 are patentable as well. (See MPEP §2143.03 (citing *In re Fine.*)) Accordingly, Applicant respectfully requests that the Examiner reconsider and remove the rejection to claims 14-16 and 20-23.

CONCLUSION

Applicants submit that all grounds for rejection have been properly traversed, accommodated, or rendered moot, and that the application is in condition for allowance. The Examiner is invited to telephone the undersigned representative if the Examiner believes that an interview might be useful for any reason.

Respectfully submitted,
BLAKELY, SOKOLOFF, TAYLOR & ZAFMAN

Date: 10/7/05

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